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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/841,156	04/25/2001	Shunpei Yamazaki	12732-033001	4159
26171	7590	06/21/2005	EXAMINER	
FISH & RICHARDSON P.C. P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			KIELIN, ERIK J	
			ART UNIT	PAPER NUMBER
			2813	

DATE MAILED: 06/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/841,156

Applicant(s)

YAMAZAKI ET AL.

Examiner

Erik Kielin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-12, 14, 19, 23-45, 47, 48, 50 and 51 is/are pending in the application.
- 4a) Of the above claim(s) 23-45 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-12, 14, 19, 47, 48, 50 and 51 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This action responds to the Amendment filed after final on 9 June 2005.

Allowable Subject Matter

1. The indicated allowability of claim 9 is withdrawn in view of the newly discovered reference(s) US 6,280,559 B1 (**Terada et al.**). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,280,559 B1 (**Terada et al.**) in view of US 5,276,999 (**Bando**).

Regarding claims 9 and 11, **Terada** discloses forming a plurality of light emitting elements **34**, at the front surface of a substrate **1**, the substrate being formed of, *inter alia*, glass or polymeric material (Fig. 4; col. 15, lines 41-51);

polishing a back surface of the first substrate by a grinding method to thereby reduce the thickness to, *inter alia*, 75 μm , which is less than 300 μm (col. 26, lines 38-41); and

bonding a color filter **35** made from a transparent substrate **37** with color filter layers/elements **47-50** thereon at the surface of the first substrate opposite to the light-emitting elements **34** (col. 26, lines 45-61).

The light emitting elements are made from a laminate of light-emitting layers, each emitting a different wavelength (paragraph bridging cols. 16-17). The layer include SrS (strontium sulfide) doped with Ce (cerium) and ZnS (zinc sulfide) doped with Mn (manganese). Each layer is a semiconductor in and of itself; therefore, the there is a light-emitting element in electrically connected to a semiconductor element.

Terada does not name the grinding as “chemical mechanical polishing.”

Bando teaches chemical mechanical polishing of substrates (col. 5, lines 25-30), for the high flatness required of displays. (See col. 1, lines 6-12.)

It would have been obvious for one of ordinary skill in the art, at the time of the invention to polish the substrate, both front and back, of **Terada** because **Bando** teaches that high flatness is required for light-emitting displays, such as that in **Terada**.

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Terada** in view of **Bando** and further in view of US 6,392,340 B2 (**Yoneda et al.**).

The prior art of **Terada** in view of **Bando**, as explained above, discloses each of the claimed features except the feature of a plurality of thin film transistors (i.e. a semiconductor element) electrically connected to the light-emitting devices.

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Yoneda teaches a electroluminescent (EL) display and is therefore drawn to the same endeavor as is **Terada**. **Yoneda** teaches that is known in the art for each light-emitting element to be electrically connected to a thin film transistor TFT (col. 1, lines 14-43).

It would have been obvious for one of ordinary skill in the art, at the time of the invention to electrically connect a TFT to each of the light-emitting devices of **Terada**, as taught by **Yoneda**, in order to have independent control over each device and thereby form a more efficient, effective display.

5. Claims 11, 14 12, 19, 47, 48, 50, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Tereda** in view of **Bando** and further in view of US 4,963,788 (**King et al.**) and considered with the article by Stuart M. **Lee** entitled "Lunar Building Materials - Some Considerations on the Use of Inorganic Polymers" for a showing of inherency only for dependent claims 14, 19, 48, and 51.

The prior art of **Tereda** in view of **Bando**, as explained above, discloses each of the claimed features except for bonding a polarization plate (claims 11 and 12) or anti-reflective film (claims 47 and 50) to the transparent substrate of the color filter.

King discloses a thin film electroluminescent display and is therefore drawn to the same endeavor as is **Tereda**. **King** teaches that contrast can be improved by providing a polarizer or antireflective coating on the viewer's side surface (i.e. the front side surface) of the display --in spite of the attenuation in luminescence (King col. 1, lines 28-42 and especially col. 5, lines 9-17).

It would have been obvious for one of ordinary skill in the art, at the time of the invention to bond an antireflective coating or polarizer to the front surface of the **Terada** display --i.e. the transparent substrate **37** of the color filter-- in order to improve the contrast, as taught by **King**.

Regarding claims 14, 19, 48, and 51, **Terada** teaches an exemplary transparent substrate **37** material of the color filter is glass (col. 24, lines 22-24). Glass is inherently a polymeric material. (See **Lee** article --especially the first line of the second page-- for validation.)

6. Claims **47**, **48**, **50**, and **51** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Terada** in view of **Bando** and further in view of US 6,476,783 B2 (**Matthies** et al.) Stuart M. **Lee** entitled "Lunar Building Materials - Some Considerations on the Use of Inorganic Polymers" for a showing of inherency only for dependent claims 48 and 51.

Regarding claims 47 and 50, the prior art of **Terada** in view of **Bando**, as explained above, discloses each of the claimed features except for bonding an antireflection film to the transparent substrate.

Matthies teaches a method of improving contrast to an EL display and is therefore drawn to the same endeavor as is **Terada**. **Matthies** teaches that the viewer's side surface of the display (i.e. the direction through which the emitted light exits) is always subject to specular reflectance. **Matthies** teaches one solution to the problem is to bond an antireflective coating on the viewer's side surface (**Matthies**, paragraph bridging cols. 9-10).

It would have been obvious for one of ordinary skill in the art, at the time of the invention to bond an antireflective coating to the viewer's side surface of the **Terada** display --i.e. the

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transparent substrate **37** of the color filter-- in order to remove specular reflectance and thereby improve the contrast, as taught by **Matthies**.

Regarding claims 8 and 51, **Terada** teaches an exemplary transparent substrate **37** material of the color filter is glass (col. 24, lines 22-24). Glass is inherently a polymeric material. (See **Lee** article --especially the first line of the second page-- for validation.)

Conclusion

7. This action is made **NON-FINAL** to give Applicant the opportunity to respond to the new grounds of rejection.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 5,800,952 (**Urano** et al.) teaches that polymeric materials including both organic (plastics) and inorganic (e.g. glass) are known for use to make color filter for electroluminescent displays (col. 1, lines 5-11; col. 11, lines 52-58).

JP 2004-327269 A (**Shimotori** et al.) discloses each of the features of at least claim 9, but does not qualify as prior art. (See Abstract.)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erik Kielin whose telephone number is 571-272-1693. The examiner can normally be reached from 9:00 - 19:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr. can be reached on 571-272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Erik Kielin
Primary Examiner
June 17, 2005